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Responses to the sham treatment versus expectancy effects

Luana Colloca

Department of Pain Translational Symptom Science, School of Nursing, University of Maryland, Baltimore; Departments of Anesthesiology and Psychiatry, School of Medicine, University of Maryland, Baltimore, University of Maryland, Baltimore; and Center to Advance Chronic Pain Research, University of Maryland, Baltimore, USA

Bennett stated that ‘the increase in the magnitude of what is generally called the placebo response (i.e., the response of the control group) in clinical trials is due to a change in the understanding of what ‘placebo’ means among the general public’ [1]. There is no doubt that society has grown to have a better appreciation of the actions and applications of placebos (and many other treatments) and documenting it with a quantitative analysis of digitized texts is highly valuable and innovative [1].

There has been a shift. Historically, the term ‘placebo’ referred to a well-intentioned deceptive treatment that the healthcare provider used to please his patient in the presence of recurrent prescription requests or under the circumstance of untreatable diseases (Shorter Oxford Dictionary, 1811: ‘placebo is a medicine given more to please than to benefit the patient’). With the introduction of clinical trials, the term ‘placebo’ gained the new meaning of a ‘sham treatment’ or ‘sham medication’ used with the intention to blind healthcare providers and patients to the physical attributes of medication (e.g., shape, color, and smell) and distinguish pharmacological (and surgical) effects from the effects of expectancies and other confounding factors.

A growing parallel line of research has focused on the neurobiological mechanisms underlying placebo effects. This research centers on the concept of expectancies as something that can be formed throughout distinct types of learning and contexts. A key tenet of this research is that expectancies are present across species, are context- and culture-dependent, and serve us in integrating what we expect with what we actually experience [3]. Therapeutic experience, verbal suggestions, and meaningful personal and social interactions can trigger experiential (i.e. direct therapeutic experience of pain reduction), instructional (i.e. verbal information of a benefit), and social (i.e. changes in behaviors and outcomes related to observation of others) learned effects [2]. This set of psychoneurobiological effects has been described in quite diverse ways over the years - from a ‘active placebo action’ given before surgery [5] to ‘context’ [4] and ‘meaning’ [7] effects.

We are talking about two separate lines of research – placebo responses observed in clinical trials and placebo effects as studied in psychoneurobiology. Despite some common features,

the two fields of research are seen as distinct by many scientific experts but are not usually seen as distinct by lay members of the public.

To some degree, definitions of placebo and placebo-related phenomena have helped to contextualize the many implications of these responses in medicine, psychology, and neuroscience. Proposing new definitions may unintentionally create more confusion than it resolves. Nevertheless, in the context of clinical trials, the replacement of the term '*placebo*' with '*dummy medication*' [6] or more appropriately with '*sham treatment*' or '*sham medicine*' (in analogy with the use of the term '*sham surgery*') [1] could represent a step forward to a more helpful understanding of the placebo phenomenon.

Placebo effects are not due to the inert substance alone and can actually occur without administering a placebo substance. Rather, positive and negative expectancies regarding simple rewards or more complex events such as outcome improvement or treatment efficacy are central to forming placebo effects [2]. Therefore, we may want to encourage a shift from the term '*placebo effects*' to the broader term '*expectancy effects*' in psychoneurobiology and medicine.

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